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5th Sem / Electrical Engg, IC

Subject : Industrial Electronics and Control of Drives

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 A thyristor (SCR) is a

a) P-N-P device b) N-P-N device

c) P-N-P-N device d) P-N device

Q.2 In a single-phase half-wave circuit with RL load and a freewheeling diode, the load voltage during the freewheeling period will be

a) zero

b) positive

c) negative

d) positive and negative

Q.3 Snubber circuit is used for

a) Triggering the SCR b) Turning off the SCR

c) Protection of SCR d) None

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 What is the AC drive control? Explain variable frequency AC drives.

Q.24 Explain the construction, working principle of step down chopper along with output-Input current-voltage waveforms involved.

Q.25 Explain working principle, types and applications of Cyclo-converter.

Q.4 A fully controlled converter uses

a) diodes only

b) thyristor only

c) both diodes and thyristors

d) none of the mentioned

Q.5 Choppers converts

a) AC to DC b) DC to AC

c) DC to DC d) AC to AC

Q.6 Inverters converts

a) dc power to dc power

b) dc power to ac power

c) ac power to ac power

d) ac power to dc power

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory. (6x1=6)

Q.7 What is the role of heat sinks?

Q.8 What is controlled rectifier?

Q.9 Draw the symbol of UJT.

Q.10 What do you mean by DC drive.

Q.11 Write name of any renewable energy source.

Q.12 Write full form of UPS.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Describe two methods of triggering a thyristor.

Q.14 Draw and explain two transistor analogy of SCR.

Q.15 Describe single phase half controlled full wave rectifier.

Q.16 Draw three phase fully wave fully controlled Bridge rectifier.

Q.17 Explain the working of series inverter.

Q.18 Write working principle and two applications of dual converter.

Q.19 Differentiate between AC drives and DC drives.

Q.20 Explain the basic concept of electric braking for AC drive.

Q.21 Describe working principle of SMPS?

Q.22 Explain working of OFF line UPS.